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ABSTRACT

With the increasing number of mothers entering the workplace and placing infants in another's care, concern has arisen regarding the effects of nonmaternal care on the development of infants and children. Particular attention has been paid to the impact on the mother-infant attachment relationship of repeated daily separations and exposure to substitute caregivers. The purpose of this paper is to review and critique the literature that focuses on nonmaternal care and mother-infant attachment. Consideration of such methodological aspects of the literature as terminology, instrumentation, sampling, and experimental design indicated that the attribution of direct causality between nonmaternal care and mother-infant attachment is impossible to determine. However, the between-group studies indicated that infants in full-time nonmaternal care, as compared to infants in less than full-time or no nonmaternal care, were more likely to be insecurely attached to their mothers. The within-group studies indicated many factors associated with nonmaternal care and mother-infant attachment. Recommendations for future research are offered. Contains 36 references. (Author/EV)

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NONMATERNAL CARE AND MOTHER-INFANT ATTACHMENT: A REVIEW OF THE LITERATURE

A Doctoral Research Paper

Presented to

the Faculty of the Rosemead School of Psychology

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In Partial Fulfillment

of the Requirements for the Degree

Doctor of Psychology

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NONMATERNAL CARE AND MOTHER-INFANT ATTACHMENT: A REVIEW OF THE LITERATURE

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The purpose of this paper is to review and critique the literature that focuses on nonmaternal care and mother-infant attachment. Methodological considerations include terminology, instrumentation, sampling, and experimental design which make the attribution of direct casuality between nonmaternal care and mother-infant attachment impossible to determine. However, the between-group studies indicated that infants in full-time nonmaternal care as compared to infants in less than full-time or no nonmaternal care were more likely to be insecurely attached to their mothers. The within-group studies indicated many factors associated with nonmaternal care and mother-infant attachment. Recommendations for future research are discussed.

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NONMATERNAL CARE AND MOTHER-INFANT ATTACHMENT: A REVIEW OF THE LITERATURE

Introduction

A striking demographic change in the past two decades has been the increase of employed mothers with infants. According to the U.S. Bureau of the Census (1995), in 1980, 38% of women between the ages of 18 and 44 who had a child in the last year were working. In 1992, 54% of mothers with infants were working. These statistics reflect an increase of 42% in a 12-year period.

The increase in the employment rate of mothers with infants appears to be due to both economic and ideological reasons (Belsky, 1990). Belsky (1990) noted that mothers entered the work force in the late 1970s because of a need to provide additional income to maintain middle-class living standards. In the early 1980s mothers were increasingly attempting to compensate for the lost earning power of their spouses. By the late 1980s it had become virtually expected that mothers would work due to the nature of the expanding economy. The women's movement also influenced the influx of women in general into the work place.

With the increasing number of mothers entering the work place and placing infants in another's care, a concern has arisen regarding the effects of nonmaternal care on the development of infants and children. Particular attention has been paid to the impact on the mother-infant attachment relationship of repeated daily separations and exposure to substitute

caregivers. This concern is a result of the psychoanalytic and ethological views that the mother or primary caretaker is the person with whom the infant forms the emotional bond which provides a foundation for subsequent psychological development (Rubenstein, 1985).

Ethological theory asserts that adult-infant attachments are a product of interaction over time (Bowlby, 1969). This interaction is a result of behaviors which each individual brings to the relationship, as well as the effects of those behaviors on each other. Ethological and attachment theories assume that prolonged separation from mother or the primary caregiver results in emotional withdrawal and avoidance by the infant. Drawing from ethological theory and empirical evidence, Bowlby concluded that a warm, intimate, and continuous relationship with a mother-figure was necessary for healthy emotional development. It was in this context that research examining nonmaternal care and mother-infant attachment was initiated.

According to Belsky (1990) and McGurk, Caplan, Hennessy, and Moss, (1993), three waves of child care research have been undertaken. The first wave began in the 1960s when investigators were interested in whether day care was harmful to a child's development. The majority of those studies were conducted in high quality university-based settings staffed by highly trained personnel where children had access to an abundance and variety of learning aids (Watkins & Bradbard, 1982). From those studies, the general consensus was that day care did not have an adverse effect on children's development (McCartney & Galanopoulos, 1988).

The results of the initial day-care research must be understood in terms of the methodological limitations of the studies. Most day-care facilities were not equal to the high quality university day-care centers in which the studies

were done. Hence, the generalizability of those studies is limited to high quality university-based day-care centers. Additionally, Belsky (1990) noted that in examining mother-infant attachment, the earlier studies focused on infant behaviors which were inappropriate measures of the quality of the attachment relationship (i.e., separation distress, stranger wariness, approach to novel social agents). Thus, the limitations of those studies should have prevented social scientists from making any conclusive statements about day care and mother-infant attachment.

The second wave of research focused on quality of day care. Various parameters of quality in day care were studied as they related to child development (McGurk et al., 1993). Belsky (1990) pointed out that the second wave studies had greater generalizability because they were community based, as opposed to university based. Investigators were still interested in the security of the mother-infant attachment, and so they compared children reared at home with mother to children reared in substitute child care. As in the first wave of research, the second wave was generally comprised of similar between-group comparisons.

Within the second wave two questions emerged from the data regarding nonmaternal care and attachment. First was the issue of whether substitute child care could lead to the replacement of mother as the attachment figure. The data did not support the concern that a substitute caregiver could replace the mother (McCartney & Galanopoulos, 1988; Gamble & Zigler, 1986). The second issue was whether nonmaternal care disrupted the mother-infant attachment. This concern has been more controversial. The evidence linking nonmaternal care and insecurity of mother-infant attachment has prompted within-group investigations of day

care. This is the third wave of research.

The purpose of this investigation is to review and critique the literature on nonmaternal care and mother-infant attachment. An analysis of the available research will provide a clearer understanding of the research results and its limitations, as well as recommendations for future research. Both the increasing number of infants in nonmaternal care and the existence of numerous research studies make an examination of this research relevant at this time.

In order to provide a more focused review, only second and third wave studies will be examined. The lack of internal and external validity exempted closer examination of the first wave studies (see Belsky, 1990). Additionally, the importance given to mother-infant attachment in this review does not indicate a belief in the lack of importance of other relationships in an infant's life. The mother-infant attachment focus in this review is based on its prominence in the research literature because the mother-infant relationship is developmentally important. The review is structured to include methodological considerations, and between-group and within-group studies of nonmaternal care and mother-infant attachment. The review will conclude with a summary of the findings and recommendations for future research.

Methodological Considerations

Various methodological considerations must be addressed in order to determine the value of the empirical research regarding nonmaternal care and mother-infant attachment. Due to the nature of empirical research, confounding factors exist which limit the results of the research. An

awareness of these limitations enables a clearer understanding of the results, as well as provides recommendations for future research. Comparability and generalizability of research depends upon the similarity of definitions, measures employed, samples, and data analyses. In this section, terminology, instrumentation, sampling, and experimental design are discussed in light of methodological considerations.

Terminology

Among the investigations looking at nonmaternal care and mother-infant attachment, a lack of consistency, as well as a variation in terminology, have caused some confusion. Attention to the terms utilized is imperative, as they specify who and what is being measured. The lack of consistency and variations in terminology influence the interpretations of the results, thereby limiting the comparability and generalizability of the results. In particular, the terms nonmaternal care and attachment need to be addressed.

Nonmaternal care. Nonmaternal care and nonpaternal care are terms used to denote the lack of the mother and parents, respectively, caring for the infant. However, which term is utilized and how the researchers intend its meaning can have important implications. In a study by Chase-Lansdale and Owen (1987), for example, the investigators examined how maternal employment (nonmaternal care) affected mother-infant and father-infant attachment. What must be taken into consideration, however, is that there was a small percentage (9.3%) of fathers who cared for the infants, influencing the attachment classification. Therefore, it is necessary to attend to who is caring for the infant, if the mother is not available. For the purpose of this review, nonmaternal care will be used to denote the absence of full-time care

by the mother, even if the father is a partial or full-time caregiver of the infant.

Across studies investigated in this review, nonmaternal care lacked homogeneity in other ways. Types of nonmaternal care included day-care centers, family day-care homes, in-home or out-of-home care by sitters, care by fathers, in-home or out-of-home care by other relatives, and in-home care by unknown persons. Unfortunately, the research did not always discriminate type of nonmaternal care.

Additionally, different studies utilized different parameters to describe the amount of time spent by subjects in nonmaternal care experiences. There was a variety of time spent in nonmaternal care: full-time, high part-time, low part-time, part-time, all of which obviously affected the outcome results. Many times the investigators simply distinguished two groups, day care versus home care. Lamb and Sternberg (1990) reported that some decisions distinguishing full-time and part-time care were based on post-hoc considerations. Precise reports of time spent in nonmaternal care, as well as the rationale for distinguishing between the groups, would have provided researchers the ability to assess and compare effects more insightfully.

Finally, the quality of nonmaternal care was rarely specified. This is unfortunate as most scholars would agree that the quality of care is important in determining relational outcomes (Lamb & Sternberg, 1990). The lack of specifications regarding type, amount of time, and quality of nonmaternal care affects the outcome results, as well as limits subsequent comparability across studies.

In addition, nonmaternal care in the infant's first year of life is generally due to the mother's employment status (Belsky, 1990). Many

studies examined in this review are labeled maternal employment and mother-infant attachment. However, nonmaternal care was also due to a mother's decision to begin or resume school. Although not specifically mentioned, nonmaternal care could have been a result of a mother's desire for additional help in child care that was not due to employment or school status. Thus, it is important to be aware of the constitution of the samples being studied.

Definition. Clarification of the term attachment is necessary, as it is what is being assessed. With regard to mother-infant attachment, Bowlby (1969) defined attachment behavior as behavior that seeks proximity to an attachment figure and whose evolutionary function is protection of the infant from danger. Bowlby insisted that attachment has its own motivation, and is not simply for feeding or mating purposes. Furthermore, Ainsworth claimed that infants, when attached, can use the attachment figure as a base from which to explore the environment and return tor reassurance.

Instrumentation

The Ainsworth Strange Situation paradigm (Ainsworth & Wittig, 1969), a standardized laboratory procedure, is typically used to assess the quality of the mother-infant attachment relationship. Its original design was to examine the balance of attachment and exploratory behaviors of 1-year-olds in high and low stress conditions. In time, however, Ainsworth became more interested in the reunion behaviors of the infants toward the mother. It was discovered that neither distress during separation, nor willingness to approach a stranger revealed attachment security, but that it was the infant's behavior, or lack thereof, toward mother upon reunion. Secure infants tended to react positively toward mother and if distressed, allowed her to

comfort them. Insecure infants tended to react by resisting contact or avoiding contact. Thus, a classification system of attachment evolved.

As a result of its prominence in the literature on mother-infant attachment, a brief description of the Strange Situation appears relevant. The Strange Situation paradigm involves a sequence of eight episodes occurring over a 20-minute period (Ainsworth, Blehar, Waters, & Wall, 1978). First, mother and infant are ushered into a laboratory playroom by an observer. Mother sits the infant down on the floor and the observer leaves. Second, mother reads a magazine, while the infant is free to explore. Third, a stranger enters and sits quietly for a moment. The stranger interacts with the mother and then approaches the infant with a toy. Fourth, the mother leaves and the stranger remains with the infant, responding to his or her needs for interaction. Fifth, the stranger leaves as the mother enters. Mother comforts the infant if upset, then introduces the infant to a toy. Sixth, mother leaves the infant alone and says "bye-bye". Seventh, the stranger enters and attempts to comfort the infant if distressed. Finally, mother returns as the stranger leaves.

Data from the Strange Situation paradigm have yielded three classifications of attachment. The classifications are based on the interactions between mother and infant, especially during the reunion episodes. Securely attached (classification B) infants tend to use mother's presence as a secure base from which to explore the environment. Secure infants are characterized by proximity, interaction, or contact-seeking behaviors upon reunion with mother. If distressed during separation from mother, secure infants are able to be comforted by her upon reunion. Normative data reveal that 66% of 1-year-old infants are classified secure (Fast, 1984).

The two other classifications reveal insecure attachments. In the mother's presence, insecure avoidant (classification A) infants tend to explore the environment without affective exchange with her. They treat mother and stranger similarly. Upon separation they display little or no distress and continue actively exploring the environment. During reunion, avoidant infants tend to avoid psychological and physical contact with mother. They may actively avert mother's gaze and avoid or ignore the mother when she initiates interaction. Approximately 20% of infants in the normal population are classified anxiously avoidant (Fast, 1984).

Insecure resistant (classification C) infants tend to display limited exploratory behavior and seem anxious, even in mother's presence. They are extremely distressed in separation episodes, yet react ambivalently upon reunion. They evidence a mixture of contact-seeking and angry resistant behaviors. They may push mother away after soliciting contact or may push away a toy the mother has offered. The resistant infants are difficult to comfort since they resist contact, despite seeking interaction. Approximately 14% of infants in the normal population are classified anxiously resistant (Fast, 1984).

The Strange Situation has been proven to be a valid and reliable measure of mother-infant attachment (Ainsworth, Blehar, Waters, & Wall, 1978; Gamble & Zigler, 1986; Vaughn, Deane, & Waters, 1985). Its reliability and validity are limited to children up to 20-months-old. Since the Strange Situation appears to be the best measure available to assess mother-infant attachment, this review is limited to those studies which utilized this assessment procedure.

Criticisms have been raised against the use of the Strange Situation (Clarke-Stewart, 1988; Clarke-Stewart, 1989; Hoffman, 1989; Vaughn, Deane, & Waters, 1985). Because of the unequal marginal distributions of attachment classifications (A, B, C), significant effects are difficult to discern in sample sizes of 30-60 subjects (Vaughn et al., 1985). In a personal letter to Belsky (1990), Vaughn claimed that samples of 150 are necessary to discern significant differences. Additionally, the statistical tests used in attachment research are not sensitive enough to discern statistical differences with research that involves a variable which is scored categorically, as is attachment security, in samples less than 150. Nevertheless, many of the studies reviewed had sample sizes less than 150 and significant differences were reported.

Another concern with the Strange Situation classification system is its tendency to compartmentalize personality and its associated limitations (Clarke-Stewart, 1988). As with all assessment measures, individual differences cannot be completely understood in terms of a classification system. Since the Strange Situation has three distinct categories, infants must fit into one of those classifications. In the meantime, individual differences which would likely be meaningful in understanding differences in security of attachment are overlooked. There have been efforts to extend the Strange Situation classification system by creating subcategories for the A, B, and C categories, as well as by creating a D category for "disorganized" attachment (Mangelsdorf, Gunnar, Kestenbaum, Lang, & Andreas, 1990). This seems useful as it would allow for more dimensions and specificity in differences of attachment.

As noted by Hoffman (1989), Clarke-Stewart (1989) raised the concern that while it is useful to have a common assessment measure for consistency

across studies, the Strange Situation has only been proven a valid and reliable measure of mother-infant attachment in home-reared infants. She noted the importance of validating the behavior of infants of employed mothers with other valid assessment instruments. The proven validity of the Strange Situation paradigm for home-reared infants only is important to keep in mind when examining the studies where father-infant (Belsky & Rovine, 1988; Chase-Lansdale & Owen, 1987) and caregiver-infant (Goossens & Ijzendoorn, 1990) attachments were assessed.

Furthermore, Clarke-Stewart (1989) questioned the psychological equivalence of the Strange Situation procedure for infants of employed and unemployed mothers. She noted that the familiar and regular separations between employed mothers and infants may likely affect the infant's behaviors during the reunion episodes. Clarke-Stewart (1989) hypothesized that the Strange Situation may not be as stressful for infants of employed mothers, since those infants were accustomed to being separated from their mother.

In response to Clarke-Stewart's proposition, Belsky and Braungart (1991) designed a study to assess whether infants who were previously classified as insecure avoidant were less stressed by and more independent in the Strange Situation. The study consisted of 20 Caucasian infants of middle class two-parent families from the Pennsylvania Infant and Family Development Project. The infants had been classified as insecure avoidant at 12 months of age via the Strange Situation. Eleven of the infants had experienced 20 hours or more per week of nonparental care in their first year of life, while 9 infants had experienced, on the average, less than 20 hours of nonparental care.

The two groups of infants were compared on two behavioral indices: stress and independence. The stress index was comprised of whimpering, fussing, and crying behaviors. The independence index was comprised of the amount of object play in which the infants were engaged. While both groups of infants demonstrated little overt distress, the infants with more extensive nonparental care evidenced statistically more whimpering, fussing, and crying behaviors and less object play during the reunion episodes ($p < .05$). Belsky and Braungart (1991) therefore concluded that infants with more extensive nonparental care tend to be more stressed and less independent in the Strange Situation.

McGurk et al. (1993) indicated three reasons to be wary when interpreting Belsky and Braungart's (1991) results. First, the small sample sizes ($n = 9$ and $n = 11$) limited the external validity of the results. Second, McGurk and his colleagues questioned the data analysis procedures. Because there was so little overt distress in either group (mean differences were less than 1 scale point per observation), Belsky and Braungart (1991) recorded the infant's negative affect every 10 seconds during the reunion episodes. The recordings were based on a 5-point ordinal scale which ranged from no overt distress (0) to scream/high-pitched vocalization (4). McGurk et al. (1993) criticized Belsky and Braungart (1991) for summing correlated scores and exaggerating the magnitude of the differences. Finally, with the lack of information regarding negative affect in the secure infants, McGurk et al. (1993) emphasized the difficulty in interpreting the data. They concluded that the differences in attachment between more and less extensive day-care experience have yet to be demonstrated.

Sampling

The research reviewed examined mother-infant attachment in maternal and nonmaternal care. Problems in sampling included issues of self-selection bias, socioeconomic status (SES), demographic information, and small sample sizes, thereby affecting the outcome and limiting the generalizability of the results.

There may have been a self-selection bias in terms of the sample of employed mothers (Clarke-Stewart, 1989). It could have been that mothers who enjoy infants more remain at home to care for their infants, while mothers who do not enjoy their infants as much choose to return to work. In a study by Hock, Morgan, and Hock (1985), it was found that mothers who were planning on remaining at home with their infants, but who returned to work, did so because of a decreased interest in motherhood and an aversion to the infant's fussiness. Therefore, it may have been that some employed mothers communicated rejection and unintentionally encouraged insecure attachments.

Another self-selection issue was related to the recruitment of families who participated in the research studies. It may have been that those families who did not opt to participate in the studies were those families already having difficulty in parent-infant attachments. Chase-Lansdale and Owen (1987) hypothesized that the timing of enrollment, whether prenatally or postnatally, may have influenced their results. They conducted a post-hoc examination of their data, comparing those families who were recruited at 12-months and those who were recruited during pregnancy. They found a higher rate of attachment insecurity among the full-time working mothers who were recruited during pregnancy.

Additionally, Belsky and Rovine (1988) combined the Chase-Lansdale and Owen (1987) data on mother-infant and father-infant attachment security and examined it as a function of timing of recruitment. They obtained significance ($p < .005$) for the differential rates of insecurity among prenatally and postnatally recruited families with full-time employed mothers. This finding highlights both the need to attend to issues of recruitment in sampling, as well as the possibility that insecure parent-infant attachment relationships may have been underrepresented in the research.

Most of the research studies utilized samples from a middle class SES. This presents a problem as the lower and upper classes were excluded, thus limiting the generalizability of results. Notable exceptions were the studies by Vaughn, Gove, and Egeland (1980) and Egeland and Hiester (1995), who examined economically disadvantaged groups. Additionally, the middle class is not a homogeneous group, but rather, it contains a vast array of intragroup differences. It is important to be specific about the variables which contribute to a middle class SES, such as level of education, level of income, number of parents in the home, and family functioning because these factors limit the outcome and generalizability of the results.

Many of the studies differed with regard to the populations they assessed. Unfortunately some studies did not specify important demographic information. Although there was some variation in ethnicity, most researchers examined Caucasian families. When the sample was diverse, the predominant ethnicity of the sample was Caucasian. Additionally, most researchers examined two-parent families, although some looked at single mothers.

Belsky (1988) and Clarke-Stewart (1988) both recognized the inadequacy of the sample sizes to detect significance in many of the research studies examining attachment differences in employed and nonemployed mothers. When Belsky (1988) combined subjects from four studies, and Clarke-Stewart (1988) combined subjects from sixteen studies (N = 1201), the results were significant. However, in many of the individual studies, significant differences between infants of employed and nonemployed mothers were not found. Sometimes, due to the small sample sizes in the studies, statistically significant differences have not been demonstrated, thus emphasizing the risk of too quickly asserting that differences do not exist.

In conclusion, most studies tended to overrepresent middle class, Caucasian, intact families, while underrepresenting lower and upper classes, differing ethnic groups, and single-parent families. Furthermore, it could have been that in studies where recruitment was done postnatally, families already struggling with insecure parent-infant attachments were underrepresented.

Experimental Design

The experimental design of a study provides the context for clarifying the results and implications of the research. The very nature of the research on nonmaternal care and mother-infant attachment was field research, rather than experimentally designed research. Mother-infant pairs were not randomly assigned to maternal care or nonmaternal care groups. Instead, investigators studied those conditions as they already existed in the world. Thus, there were a number of variables which may have confounded the results.

Rubenstein (1985) noted that maternal employment is not a unidirectional variable having direct effects on attachment. Other variables, such as mother's attitude toward working, socioeconomic status of the family, quality of nonmaternal care, family functioning, as well as mother's satisfactions, anxieties and concerns, impacted the nature of the mother-infant attachment. Therefore, it was unclear whether nonmaternal care was simply a correlate, or a cause of mother-infant attachment security. Yet, the results of the correlational research have provided evidence for investigators to begin to understand the factors involved in nonmaternal care and mother-infant attachment.

Many of the research designs investigating nonmaternal care and mother-infant attachment have been between-group, rather than within-group designs; that is, many studies involving infants have compared maternal care to nonmaternal care, rather than examining variations in the quality of both nonmaternal and exclusive maternal care. A potential implication of between-group designs is the assumption that the samples are comparable on most demographic and psychological characteristics, with the exception of the care condition. Therefore when a difference emerges between the two groups, the assumption could be made that the difference is due to the care condition. However, certain between-group studies (Barglow et al, 1987; Belsky & Rovine, 1988; Hock, 1980; Owen & Cox, 1989; Schwartz, 1983; Vaughn et al., 1980) have demonstrated that differences in areas other than rearing conditions exist in home-reared and day-care-reared groups. Despite numerous efforts to eliminate confounding factors, comparisons have been done on nonequivalent groups.

Within the nonmaternal care group, there was a great deal of variation with regard to experiences in nonmaternal care (Simon, 1994). The designs differed in regard to the requirements to be considered a member of the nonmaternal care group. Most studies did not report this data. There were differences in the ages at which the infants began nonmaternal care and in the length of time they spent in nonmaternal care before being assessed. Additionally, designs differed in regard to the age of the infant being assessed, although infants were typically around 12-months-old and 18-months-old at the time of assessment.

Lamb and Sternberg (1990) noted the importance of obtaining the family's baseline functioning, that is information about child and family characteristics prior to the family's enrollment in nonmaternal care studies. By knowing a family's baseline functioning prior to enrollment, researchers could be more clear whether the differences in attachment were due to the nonmaternal experience or some other variables. They cited the inappropriateness of reporting insecure attachments in the absence of information regarding the antecedents of insecurely attached children.

Review of the Literature

A review of the literature includes both between-group and within-group studies. Researchers examined the relationships between maternal and nonmaternal care experiences, and secure and insecure mother-infant attachments.

Between-Group Studies

Between-group studies compared rearing conditions (home care and differing degrees of nonmaternal care) and evaluated mother-infant

attachment with the Strange Situation paradigm. Researchers were interested in how nonmaternal care and exclusive maternal care experiences related with the security of attachments.

Hock (1980) surveyed 97 mother-infant pairs comprised of 42 working mothers and 55 nonworking mothers. Eighty-six percent of the subjects were Caucasian, while the other 14% were of African-American descent. The SES of the subjects varied, but the mean SES was middle class. Ninety percent of the subjects were from two-parent families. Nonmaternal care began on an individual basis in the home setting when the infants were 3-months-old. The purpose of the study was to compare working and nonworking mothers' attitudes and caregiving behaviors, to compare the two groups of infants' developmental status and social behaviors, and to examine the relationships between maternal and infant characteristics in the two groups. The results indicated no significant differences in the quality of the attachment relationship. Hock (1980) concluded that work status was not significantly related to infant developmental status.

In a study by Vaughn, Gove, and Egeland (1980), 104 mother-infant pairs of low SES and unknown racial demographics were examined. The marital status of the families was unknown. The researchers compared three groups regarding type of care: nonmaternal care began before 12-months-old, nonmaternal care began between 12-months-old and 18-months-old, and no nonmaternal care. Tests of 29 potential differences in the three groups were conducted to eliminate variance. The type of nonmaternal care generally consisted of babysitters chosen as a matter of convenience and the quality of care was unstable. Infants were evaluated at both 12-months-old and 18-months-old. The purpose of the study was to examine whether physical

inaccessibility of mothers, as a result of nonmaternal care, would be associated with anxious avoidant infant attachments.

The results indicated that in regard to both infant and mother demographics, only one factor emerged differentiating the mothers who returned to work or school from those who did not. There was a greater likelihood of an absent adult male in the households of mothers who returned to work or school. When the infants were 12-months-old, 38% of the families in the early work group, 17% of the families in the late work group, and 56% of the families in the no work group were intact. When the infants were 18-months-old, 38% of the families in the early work group, 17% of the families in the late work group, and 50% of the families in the no work group were intact. This discriminating factor was attributed to the late work group, rather than the early work group.

Infants of mothers who returned to work or school before their infants were 12-months-old were more likely to exhibit an anxious avoidant attachment at 12-months-old ($p < .005$), and at 18-months-old ($p < .02$), than infants of mothers who stayed home. These results were not significant for infants who began nonmaternal care after their first birthday. The researchers noted that due to the absence of pre-existing group differences, other than the presence or absence of an adult male in the household, they could be more confident of their results.

Schwartz (1983) conducted a study with 50 mother-infant pairs from middle and upper-middle class intact families. The racial demographics were not known. Infants who were in day-care homes enrolled before 9-months-old, having a caregiver infant ratio of 1:1-8. Care arrangements were broken down into: full-time, part-time, and non-day-care groups. Quality of

nonmaternal care was not reported. Infants were assessed at 18-months-old. The purpose of the study was to determine attachment behaviors within the three groups of care arrangements, and to examine if group differences in attachment behaviors could be accounted for by maternal behaviors, or differences in care giving.

The results indicated that the three care arrangement groups did not differ on birth order, sex, or family SES. Additionally, there were no reported differences between full-time and part-time day-care groups. Two factors emerged regarding maternal behaviors. Mothers of firstborn children were more responsive to their infant's social expression than mothers of second born children ($p = .02$). Mothers who put their infants in part-time and full-time day-care displayed more positive emotional behaviors ($p = .0016$; $p = .0042$, respectively) than home care mothers. Finally, infants in full-time nonmaternal care were more likely to display avoidant behavior upon the last reunion episode in the Strange Situation than infants cared exclusively by their mothers ($p = .0067$) and infants in part-time nonmaternal care ($p = .05$).

Schwartz (1983) concluded that her study provided some support for ethological theory, which maintains that separation from mother results in anger, particularly in the reunion episodes. Furthermore, ethological theory hypothesizes that the length of separation affects the degree of anger. Her results (full-time nonmaternal care infants expressing the most avoidant behavior, with part-time next, and exclusive maternal care infants the least avoidant behavior) may be seen as supporting ethological theory.

Jacobson and Wille (1984) studied 93 mother-infants pairs of Caucasian descent and predominantly upper-middle class SES. All but one family was intact. There were three groups differentiated by hours of nonmaternal care:

0-3 hours, 4-19 hours, and 20-54 hours. The median age for beginning nonmaternal care was 8-months-old, with the range being 1-month old to 17-months-old. Although the setting of nonmaternal care varied, a babysitter's home was the most likely type of nonmaternal care. Infants were assessed at 18-months-old. The purpose of the study was to examine distress in response to maternal separation.

Results indicated that there was a predominance of secure attachments in the 4-19 hours of nonmaternal care group (77.8%) and a predominance of insecure attachments in the 20-54 hours of nonmaternal care group (61.5%). The researchers concluded that the degree of anxious attachment was related in a curvilinear trend to nonmaternal care.

Barglow, Vaughn, and Molitor (1987) examined 110 mother-infant pairs from middle and upper-middle class intact families. Racial demographics were not reported. All infants in nonmaternal care began nonmaternal care at least 4 months before their first birthday. Nonmaternal care was provided for by a nonrelative in the infant's home which was the next best alternative reported by the mothers. The majority of mothers reported satisfaction with the quality of nonmaternal care. Infants were assessed between 12-months old and 13-months old. The purpose of the study was to examine nonmaternal care and mother-infant attachment in a sample that attempted to control for factors such as stress related to low SES, family intactness, and the quality of nonmaternal care.

Results indicated that there were significantly more mothers of firstborn children in the at-work group than the at-home group ($p < .01$). Therefore, the researchers conducted post-hoc tests to control for parity, that is, whether the children were firstborn or later-born infants. There were no

psychological or demographic factors found which distinguished the two groups of mothers. Results indicated that the avoidance behavior during reunion episodes was significantly higher among infants in nonmaternal care, as compared to exclusive maternal care ($p < .005$). There was a significant number of firstborn infants of full-time working mothers who were insecure avoidant, as compared to home-reared infants ($p < .05$).

Barglow et al. (1987) concluded that there is a greater risk of insecure avoidant attachments in infants whose mothers work full-time. Because of their attempt to control for group differences, the researchers expressed that their results cannot be easily dismissed due to confounding factors. They noted, however, that there may have been personality differences not measured in their battery of tests which may have accounted for differences in attachment.

Chase-Lansdale and Owen (1987) examined 97 mother-infant pairs. In an attempt to have a homogeneous sample, firstborn infants from middle class, well-educated, and intact families were studied. Racial demographics were not reported. All infants in nonmaternal care began out-of-home care before the infant was 6-months-old. Types of nonmaternal care varied: 44% in family day care homes, 16% by sitters, 9.3% by fathers, 9.3% by other relatives, and 21.1% by some combination of the above. Comparisons were made between full-time employed mothers and nonemployed mothers. Infants were assessed at 12-months-old. The purpose of the study was to examine the relationship between the resumption of full-time employment by mothers of infants under 6-months-old and both mother-infant and father-infant attachments.

Results indicated no significant relationship between maternal work status and the quality of mother-infant attachment. The researchers hypothesized that the infant's age at the time of the mother's resumption of employment may have had an impact on attachment. Since all the mothers in the study resumed work before the infants were 6-months-old, an earlier age than in most studies showing differences in attachment, the earlier separation may have been less traumatic for the infants. Furthermore, the researchers noted that the timing of recruitment, influencing a self-selection bias, may be an important variable. A post-hoc examination revealed a higher incidence of insecure attachments in the families recruited prenatally compared to those recruited postnatally (60% vs. 17% to mother and 80% vs. 28% to father).

There was, however, a significant number of insecure attachments of sons to fathers in the employed mother group ($p < .03$). Particularly, the sons of employed mothers exhibited more resistance to their fathers in the first reunion ($p < .01$) and the second reunion ($p < .005$) than sons of unemployed mothers. The researchers hypothesized that the stress related to a mother's early resumption of employment may be more disadavantageous for infant boys. Fathers may be less emotionally sensitive and responsive to their infant boys than to their infant girls. The researchers noted the importance of examining the factors of familial stress and father's senstivity and responsiveness in future research. Finally, the researchers suggested that maternal employment and nonmaternal care may place infant boys at a greater socioemotional risk than infant girls.

Belsky and Rovine (1988) examined 149 mother and firstborn infant pairs from middle class, intact families. Racial demographics were not

reported. Because families were recruited prenatally for an infant and family development study, and not day care per se, a self-selection bias may have been averted. Infant care was divided into four groups: full-time nonmaternal care (35 or more hours per week), high part-time nonmaternal care (20-35 hours), low part-time nonmaternal care (10-20 hours), and mother care (5 hours or less of nonmaternal care). All the infants in the nonmaternal care groups began out-of-home-care before 9-months-old. Nonmaternal care varied a great deal: 36 infants were cared for by a nonrelative babysitter or family day care out of the infant's home, 17 infants were cared for by a nonrelative in the infant's home, 9 infants were cared for by the infant's father, 11 infants were cared for by relatives, and 9 infants were in day-care centers. Infants were assessed at 12 and 13-months-old. The purpose of the study was to examine whether nonmaternal care initiated in the infant's first year was associated with an increased risk of insecure attachment.

The results of background comparisons indicated that the groups differed with regard to father's education ($p < .05$) and father's occupation ($p < .01$). There were no differences in family characteristics found between the three attachment groups. Additionally, the relationship between nonmaternal care and attachment was not a function of differences in child care arrangements.

The between-group analyses revealed some significant results. In a three-way log-linear analysis, there was a significant relationship between care group and attachment security ($p < .05$). Forty-seven percent of the infants in full-time nonmaternal care were most likely to be classified insecure, 35% of the infants in high part-time nonmaternal care were classified insecure, 21% of the infants in low part-time nonmaternal care were

classified insecure, and 25% of the infants in exclusive maternal care were classified insecure. Infants with 20 or more hours of nonmaternal care scored significantly higher on the avoidance behavior rating upon reunion with mother ($p < .05$), and were also more insecurely attached to mother ($p < .025$), than the infants with less than 20 hours of nonmaternal care.

With regard to father-infant attachment, a chi-square analysis revealed that infant boys in full-time care were more likely to be insecurely attached than all other boys ($p < .05$). Infant girls in the exclusive maternal care group, as compared to all other girls, were more likely to be insecurely attached to their fathers ($p < .01$). Sons in 20 or more hours of nonmaternal care were significantly more likely to be insecurely attached to both parents ($p < .05$).

Furthermore, Belsky and Rovine (1988) combined data from five studies of nonrisk samples (N = 491) based on socioeconomic status (Barglow et al., 1987; Belsky & Rovine, 1988; Chase-Lansdale & Owen, 1987; Jacobson & Wille, 1984; Owen & Cox, 1989). They found that infants in 20 or more hours of nonmaternal care a week were 1.6 times more likely to be classified insecurely attached to their mothers, than infants with less than 20 hours of nonmaternal care ($p < .0005$). The researchers concluded that extensive nonmaternal and nonpaternal care in the infant's first year is a risk factor for developing insecure attachments.

Owen and Cox (1989) studied 38 Caucasian mother-infant pairs from middle class SES and intact families. The families were recruited prenatally. All infants in nonmaternal care entered an out-of-home care situation before 7-months-old. The mothers were divided into three work groups: full-time work, part-time work, and unemployed. The infants were assessed at 12-months-old. The purpose of the study was to examine the relationship

between maternal employment and the nature of the mother-infant attachment. Additionally, the researchers were interested in some potential mediating factors of employment which likely influenced the mother's child rearing functions. These included mother's attitudes, satisfactions, psychological health and functioning, and interactions with the infant.

The results of the background information analyses revealed some differences between the full-time employed and nonemployed mothers. First, since full-time employed mothers had a significantly lower SES than part-time employed and nonemployed mothers, the researchers decided to use the total SES score as a covariate to partial out the effects of SES and see if there were still significant effects. Additionally, comparisons were made between full-time employed and nonemployed mothers, excluding part-time employed mothers. This decision was made because of the small number of part-time employed mothers and because of previous research focusing on the differing effects for full-time and part-time employed mothers.

Regarding maternal attitudes toward employment, full-time employed mothers were more dissatisfied with their status than nonemployed mothers ($p < .001$) when the infants were 12-months-old. When the SES was added as a covariate, the relationship remained significant ($p < .01$). Regarding maternal psychological health, mothers employed more than 40 hours per week with infants 3-months-old experienced state anxiety (as opposed to anxiety as a trait) levels higher than mothers employed fewer hours and nonemployed mothers ($p < .01$). Furthermore, mothers who were more satisfied with their employment status, were psychologically healthier and less anxious prenatally ($p < .01$). Regarding maternal investment in parenthood, mothers who were employed full-time or who were expecting to

be employed full-time, were less invested in their roles as parents when their infants were 3-months-old ($p < .05$). Furthermore, nonemployed mothers expressed a greater investment in parenthood than full-time employed mothers, and regardless of employment status, mothers of boys expressed a greater investment than mothers of girls ($p < .05$).

Although there was a tendency toward a correlation between full-time employment status (as compared to nonemployed) and insecure attachment (as compared to secure), the results were not significant ($p < .09$). When mothers were not employed there were twice as many secure infants (67% securely attached) as insecure infants (33%). When mothers were employed full-time, there were twice as many insecure infants (33% securely attached) as secure infants (67%). There was more infant resistance upon the second reunion episode with full-time employed mothers as with nonemployed mothers ($p < .01$). When SES as a covariate was added, the relationship remained significant ($p < .05$). Owen and Cox (1989) concluded that their study should not be utilized to simply endorse or disapprove of maternal employment. Instead they suggested their research of the mediating factors of maternal employment on attachment was likely more valuable for understanding the relationship between maternal employment and attachment.

Lamb, Sternberg, and Prodromidis (1992) combined thirteen studies and examined 897 mother-infant pairs. Thus, the demographic information of the families and the nonmaternal care varied. In general there was a lack of information regarding the quality of nonmaternal care. The researchers did, however, mention that most infants were from Caucasian (98%), advantaged families. Infants were assessed between 11 and 24-months-old.

This is disconcerting because the Strange Situation is only valid for infants up to 20-months-old. The purpose of the study was to examine the relationship between security of attachment and nonmaternal care. In particular, the researchers investigated whether there was a higher rate of insecure avoidant attachments associated with nonmaternal care, whether there were greater risks involved with extensive nonmaternal care, and whether the degree of risk was associated with the timing of enrollment.

Results indicated that the recruitment strategy did not affect the proportion of secure and insecure infants in maternal and nonmaternal care groups. The researchers reported that infants in exclusive maternal care, as compared to infants who experienced more than 5 hours of nonmaternal care per week, evidenced more secure attachments ($p < .05$). Additionally, insecure attachments were more prevalent among infants who entered nonmaternal care between 7 and 12-months-old than in infants who entered nonmaternal care between 0 and 6-months-old, and who were assessed after 15-months-old as compared to infants assessed before 15-months-old ($p < .05$). Finally, infants in part-time nonmaternal care, as compared to infants in full-time nonmaternal care, were found to be more insecurely attached in older ages ($p < .05$) and more securely attached in younger ages ($p < .05$). Lamb et al. (1992) concluded that there was a significant relationship between insecure mother-infant attachment and nonmaternal care experience.

Roggman, Langlois, Hubbs-Tait, and Rieser-Danner (1994) examined 105 Caucasian mother-infant pairs from lower-middle to upper-middle class, intact families. Types of nonmaternal care varied: 39% were in maternal care only, 11% were with a babysitter in the home, 27% were in family day-care, and 24% were in day-care centers. The researchers reported the quality of

nonmaternal care varied. Infants were assessed at 12-months-old. The purpose of the study was to replicate Belsky and Rovine's (1988) study using a similar sample, the same attachment measures, the same definitions of full- and part-time care, and the same data analysis techniques. The researchers attempted to demonstrate the bias inherent in attachment research since much of the published research reported significant results. Therefore, Roggman et al. (1994) utilized a data set which was representative of the "file drawer problem," that is, those studies which have been unpublished because of non-significant results.

The researchers reported that socioeconomic status was not related to either the attachment or day-care measures. Results indicated that laterborn infants were more likely to be securely attached when they were in nonmaternal care more than 20 hours per week or less than 4 hours per week ($p = .02$). Regarding parity, type of care, and measures of attachment, resistance in the first reunion in the Strange Situation was highest among firstborn infants in exclusive maternal care, while resistance was highest among laterborn infants in part-time nonmaternal care ($p = .001$). Quantity of nonmaternal care and age of entry into nonmaternal care were examined in relation to measures of attachment. Resistance ratings in the first reunion were found to be lower for infants entering nonmaternal care before 6-months-old and with 20 or more hours of nonmaternal care, than for the other infants ($p = .037$). Finally, types of nonmaternal care in relation to attachment and the quantity and onset of nonmaternal care were examined. It was found that infants in daycare centers exhibited more proximity-seeking behavior in the first reunion than infants in family day-care or in-home babysitters ($p = .032$).

Roggman et al. (1994) concluded that there was no consistent relationship between nonmaternal care and attachment. The most consistent pattern of results in all of the analyses indicated that anxious attachments were more likely in infants in minimal or part-time nonmaternal care. Additionally, resistant behavior seemed to be lowest in those infants who entered nonmaternal care before 6-months-old and who spent 20 or more hours per week in nonmaternal care. The researchers noted that these results were not similar to those predicted by other researchers, nor did they support ethological theory.

Several hypotheses were offered by Roggman et al. (1994) in an attempt to account for their results. The variations in definitions of nonmaternal care and the occasional decision to exclude part-time nonmaternal care from the analyses of previous research may account for the differing results. When part-time nonmaternal care was excluded from Roggman et al.'s (1994) analyses, the results indicated that proximity seeking was lowest for infants with more than 20 hours of nonmaternal care per week and highest for infants with less than 5 hours of nonmaternal care per week. Furthermore, the researchers wondered if the part-time nonmaternal care group was so small, particularly when subdivided for parity, that it increased the probability of Type I errors.

Roggman et al.'s (1994) results, which indicated more anxiety in the mother-infant attachment in relation to part-time nonmaternal care, may have been due to the infants dealing with their mother's less than regular work schedule. Another possibility may be that mothers working part-time had more conflict and ambivalence regarding their employment status and maternal role. Additionally, it may be that mothers working part-time may

have had to rely on sporadic and inconsistent alternate care arrangements. Finally, the researchers concluded that the true relation between nonmaternal care and attachment was unknown and remains to be discovered.

Roggman et al.'s (1994) results stand in contrast to the other studies reviewed which generally found that secure attachments were negatively related to nonmaternal care experiences. Roggman et al.'s (1994) results appear to have been due to the researchers' decision to examine data from unpublished studies reporting non-significant results.

When Belsky (1988) combined data from four studies comparing full-time employment status with less than full-time employment status, he found a 15% greater probability that infants of full-time employed mothers were classified as insecure as compared to infants of less than full-time employed mothers (41% vs. 26%). He therefore concluded that there was an increased risk of insecure attachment with nonmaternal care. Clarke-Stewart (1988) reached a different conclusion despite similar results. When she combined data from sixteen studies, she found a 8% greater probability that the infants of full-time employed mothers were classified as insecure as compared to infants of less than full-time employed mothers (37% vs. 29%). Although she admitted that the results were significant, and that there were more infants of full-time working mothers insecurely attached, she interpreted the data differently. When Lamb et al. (1992) combined data from 13 studies, they reported a 6% greater probability that the infants were insecurely attached in nonmaternal care, as compared to exclusive maternal care (35% vs. 29%).

Clarke-Stewart (1988 & 1989) noted that although there was a greater proportion of insecure attachments among infants in full-time nonmaternal care, the results did not reflect much magnitude. According to her 1988 report, there was only an 8% greater probability that the infant was classified insecure when mother worked full-time. When she combined the avoidant and resistant infants into an insecure category and compared it to the proportions of infants from other studies abroad, as well as within the United States, she found that the results were similar. Thus, she concluded that the proportion of insecure infants was within normal range and that the difference was not large enough to be alarmed if mothers work.

Although inconsistent and methodologically limited, the general results of the relevant literature regarding the between-group studies seem to indicate that infants whose mothers work full-time during the infant's first year, are more likely to be insecurely attached as assessed in the Strange Situation, than those infants whose mothers work part-time or not at all. Many researchers pointed out the need to be attentive to the fact that many of the infants in extensive nonmaternal care did not exhibit insecure attachments. It is important to keep in mind that extensive nonmaternal care does not inevitability lead to insecure attachments.

Within-Group Studies

In discussing the results, the variety and complexity of the factors involved in nonmaternal and exclusive maternal care are important to keep in mind. Many factors might influence a woman to stay at home or return to work or school in her infant's early life. Those factors, along with the nonmaternal care experiences, likely influence the quality of attachments.

Since extensive nonmaternal care is not necessarily associated with insecure attachments, identifying those factors which increase and decrease the risk of insecure attachments is important. Therefore, within-group analyses are useful to examine more closely which factors influenced the mother-infant attachments. In the within-group studies, researchers attempted to examine the variables within nonmaternal and maternal care experiences which were associated with secure and insecure attachments. Some of the previously addressed studies conducted a series of secondary analyses to compare the characteristics of the infants, families, and nonmaternal care groups.

A within-group analysis by Hock (1980), a study described earlier, revealed that there were two factors which differed significantly for working and nonworking mothers. Nonworking mothers expressed more separation anxiety and distrust of alternate caregivers, and indicated little interest in a career ($p < .05$). Working mothers expressed less dependence upon others for help in decision making ($p = .01$). The nonworking mothers had infants who displayed more intense behavior aimed at maintaining proximity ($p < .05$). Finally, the results indicated that if working mothers had a conflict between beliefs regarding exclusive maternal care and beliefs regarding their work status, then their infants tended toward more intense negative reunion behavior. Hock (1980) concluded that work status was not significantly related to mother's attitudes and caregiving behaviors, nor to the quality of the mother-infant attachment.

A within-group analyses of the Vaughn et al. (1980) data, described earlier, revealed that the absence of an adult male in the household (family nonintactness), along with the mother's work or school status, correlated with the quality of attachment. There were significantly more anxious

avoidant and anxious resistant infants in nonintact families as compared to intact families at both 12-and 18-months-old ($p < .05$). Furthermore, the researchers found that mothers who returned to work or school experienced significantly more stressful events related to work or school than mothers who stayed home ($p < .002$). As noted by McCartney and Galanopoulos (1988), the family background variables of single parent status and high stress rather than nonmaternal care per se, may have been responsible for the differences in attachment.

Benn (1986) examined 30 mother-firstborn infant son pairs. In an attempt to reduce confounding factors, only married mothers with a high socioeconomic status who worked a minimum of 30 hours a week outside the home were recruited. Additional criteria included non-day-care center as the alternative care arrangement and nonmaternal care begun before sons were one-year-old. Twelve mothers utilized babysitters in the infant's home ($n = 4$) or in the sitter's home ($n = 8$). When the care arrangement was in the sitter's home, the sitter's own children were present for part of the day. The other thirteen mothers utilized family day-care groups, where the median number of children was four. Thirteen of the infants had remained in the same care group since the mothers returned to work, and the median number of care arrangements per infant was two.

The purpose of the study was to examine the relationship between maternal psychological functioning and the quality of mother-infant son attachment (secure vs. insecure) in families where mothers returned to full-time work before their sons' first birthday. Specifically, maternal integration and caregiving functions were hypothesized to differentiate secure and insecure infants. Benn (1986) also examined care arrangements, age of infant

when mother returned to work, and demographic characteristics in relation to attachment.

The maternal integration measure (Benn, 1986) was a 5-point scale designed to conceptualize maternal emotional functioning. The scale consisted of a continuum of work-mothering characteristics from high level (1-2) to low level (5). High level was characterized by ease, warmth, and relaxation in mothering, and high sensitivity to the infant's needs. The alternate caregiver was regarded as an accessory and not a replacement for mother. There was ongoing communication between mother and caregiver. Mother was secure in who she was as a person and viewed her work as a way to expand her personhood, rather than to provide her self-worth. Low level was characterized by a predominance of anger and frustration in the mother-infant relationship, with little pleasure emanating from mothering. The infant's dependence was experienced as draining and burdensome, which was then communicated as resentment. The mother was unable to satisfy both her own and her infant's needs. Care arrangements were randomly chosen and there was little communication with caregiver. Work was the primary gratification and was viewed as filling a void and warding off depression.

In comparing secure and insecure infants, the results indicated that there were no overall significant differences on demographic characteristics. Regarding maternal variables, secure infant boys had mothers who were more sensitive ($p < .01$), accepting ($p < .01$), and integrated ($p < .01$). Mothers of securely attached infant sons were more satisfied with how they spent their nonwork time ($p < .05$). Regarding the substitute care variables, mothers of secure infant sons resumed work earlier than mothers of insecure infant sons ($p < .05$).

Regarding maternal integration and quality of the attachment variables, another analysis was done to clarify the relationship. The researchers found that secure relationships were more prevalent when mothers exhibited high or medium high levels of integration ($p < .0001$). Regarding maternal integration and variables of maternal functioning, 6 out of 12 correlations were significant. Highly integrated mothers were accepting of ($p < .001$) and sensitive to ($p < .001$) their infants, as well as more satisfied with how they spent their own time ($p < .05$). Those mothers were also found to have a higher socioeconomic status ($p < .05$), a greater family income ($p < .05$), and a greater satisfaction with their husbands' involvement in child rearing ($p < .01$). There were more sons of highly integrated mothers in the care of a sitter than sons of less integrated mothers ($p = .01$).

Benn (1986) concluded that highly integrated mothers were more likely to have securely attached sons than poorly integrated mothers. She proposed that the effects of maternal employment on mother-son attachment are mediated by the mother's emotional state. A mother's emotional state is communicated through her affect and child rearing practices. Benn (1986) hypothesized that if the mother-infant son relationship is warm and accepting, then the infant may be assured of her availability despite her absence. Furthermore, if the mother-infant son relationship is characterized by anger, frustration and ambivalence, then the infant may experience the daily separations as confirming the unavailability of mother. Benn (1986) concluded that maternal employment status appeared to be mediated by a mother's affective state which was manifested in her attitudes and practices regarding child rearing.

Similar results were found by Egeland and Farber (1984) who examined 267 mother-infant pairs. Sixty-two percent of the mothers were single and 86% of the pregnancies were not planned. Mothers were of various socioeconomic levels and although predominantly Caucasian (80%), some were African American (14%), Native American and Latino. The researchers found that mothers of secure infants were more cooperative and sensitive during feeding and play, than were mothers of insecurely attached infants ($p = .04$). Furthermore, mothers of insecure avoidant infants exhibited more negative maternal feelings and less desire for motherhood than mothers of securely attached infants ($p = .02$). Egeland and Farber (1984) concluded that maternal characteristics were associated with the development of different attachment relationships.

The within-group analyses of Belsky and Rovine (1988), a study described earlier comparing secure and insecure infants from families with more than 20 hours of nonmaternal care, revealed that in examining maternal and family characteristics mothers of insecure infants reported their marriages to be less positive than they desired ($p < .05$). The only significant result in examining infant characteristics was that insecure infants were described by their mothers as being fussy and difficult nine months prior to the Strange Situation assessment ($p < .05$).

Regarding the care arrangements, almost all mothers expressed satisfaction with their nonmaternal care. The researchers found that mothers of insecure infants indicated more motivation for a career than mothers of secure infants ($p < .05$). Finally, infants cared for by their fathers, or cared for in the home of a nonrelative such as a babysitter or family daycare, were both disproportionately likely to have secure attachments to their mothers ($p <$

.05), whereas infants cared for by a relative other than their father or cared for in an infant day-care center were both disproportionately likely to be insecure with their mothers ($p < .05$). All of the infants whose nonmaternal care was by their fathers ($n = 7$) were classified as securely attached to their mothers. There was a 43% rate of infants who were insecurely attached to their mothers in the extensive nonmaternal care group. When the data was adapted to extensive nonpaternal care, the rate of insecurity rose to 49%.

There were no comparable differences between families who utilized more than 20 hours of nonmaternal care per week and families who utilized less than 20 hours of nonmaternal care per week. Belsky and Rovine (1988) noted that the lack of comparable differences suggested that the relationship between extensive nonmaternal care and insecure mother-infant attachment was not simply a function of the factors identified.

Belsky and Rovine (1988) concluded that under certain conditions, infants who experienced extensive nonmaternal and nonpaternal care were at a higher risk for the development of insecure attachments. Their within-group analyses revealed that certain factors were identifiable with secure and insecure mother-infant attachments and extensive nonmaternal care. The infants who experienced 20 hours or more of nonmaternal care per week and who were classified as insecurely attached to their mothers were more likely to be characterized as difficult or fussy by their mothers. Additionally, the mothers of the infants who experienced 20 hours or more of nonmaternal care per week tended to express less satisfaction with their marriages and have greater working motivation. The infants who experienced extensive nonmaternal care and who were classified as securely attached to their mothers were more likely to be cared for by their fathers.

Owen and Cox (1989) were interested in three variables which were related to employment status: mother's state anxiety when the infant is 3-months-old, mother's investment in parenthood when the infant is 3-months-old, and mother's satisfaction with her employment status. These variables were examined in relation to quality of attachment in correlational analyses and ANOVAs. Mother's anxiety when the infant is 3-months-old was correlated with the attachment continuum ($p < .01$) and specifically with resistance upon the second reunion ($p < .01$). Results also revealed that the more anxious mothers, as compared to the less anxious mothers when their infants were 3-months-old, were more likely to have insecure attachments and resistance with their 12-month-old infants ($p < .05$).

The mother's investment in parenthood was correlated with the infant's resistance upon the second reunion ($p < .05$), but not with attachment. These results suggested that mothers who had a lower investment in parenthood were more likely to have infants who demonstrated resistant behavior in the Strange Situation. Finally, the infant's resistance upon the second reunion was correlated with mother's reported role satisfaction when the infant was 3-months-old ($p < .05$) and when the infant was 12-months-old ($p < .01$). These results indicated that mothers who were more satisfied with their roles were less likely to have infants who demonstrated resistant behavior in the Strange Situation.

Owen and Cox (1989) found that the negative relationship between mother's anxiety and her employment status and between mother's anxiety and the security of attachment indicated that maternal employment may negatively affect the mother-infant attachment if employment heightens the mother's anxiety. The researchers also hypothesized that investment in

parenthood may mediate the effects of employment status on the security of attachment. Therefore, correlational analyses were run between the mother's anxiety and investment in parenthood when the infant is 3-months-old and mother-infant interaction (sensitivity, animation, and reciprocal interaction), as well as between parenting when the infant is 3-months-old and attachment.

The results revealed that mother's anxiety when the infant is 3-months-old was related negatively to sensitivity ($p < .01$), animation ($p < .01$), and reciprocal interaction ($p < .01$). Mother's investment in parenthood was related to sensitivity ($p < .01$) and animation ($p < .05$). The mother-infant interaction variables were summed together and the composite score was related to the infant's resistance in the Strange Situation ($p < .01$). The composite parenting score was related to the security of attachment for boys only ($p < .05$). Owen and Cox (1989) concluded that despite a lack of significant relationships between maternal employment status and mother-infant interaction, there were significant correlations between mother-infant interaction variables and qualities of maternal functioning which were found to be related to maternal employment status. The mother-infant interaction variables were also correlated to the infant's resistance.

Of the three variables related to maternal employment status, anxiety was the most strongly related to mother-infant attachment. The researchers found that anxiety was significantly related to various qualities of parenting which were also related to attachment. Therefore, Owen and Cox (1989) reported that maternal employment was related to mother's anxiety, which was then related negatively to qualities of parenting and to the security of attachment. They found that when a mother was more anxious, she was less

sensitive and less animated, as well as less engaged in reciprocal interaction with her infant, and less securely attached to her infant. The mother's anxiety and qualities of parenting appeared to mediate the effects of the employment status on mother-infant attachment.

Owen and Cox (1989) reported that the mother's state of anxiety before birth was not related to her subsequent employment status. Additionally, the mother's anxiety state when the infant is 3-months-old was not significantly different between the nonemployed mothers and the full-time employed mothers. However, the anxiety of the mothers who were employed more than 40 hours per week was different from that of the mothers who were employed less hours and that of those nonemployed. These results demonstrated that the employed mothers as a whole were not inherently more anxious than the nonemployed mothers. The results indicated that the mothers working more than 40 hours a week while sustaining maternal responsibilities experienced anxiety.

The researchers found that investment in parenthood was significantly related to two qualities of parenting which were also related to attachment. Therefore, Owen and Cox (1989) indicated another indirect relationship between maternal employment and the security of attachment. They suggested that an early resumption of maternal employment, along with less investment in parenthood, was related to a less optimal mother-infant interaction at 3 months which was related to less secure mother-infant attachment. Again, the results suggested that investment in parenthood mediated the effects of maternal employment on mother-infant attachment.

As described earlier, Owen and Cox (1989) found that the mothers who were employed full-time were less satisfied with their employment status

than the nonemployed mothers. The researchers also found that mothers who were more satisfied with their roles were psychologically healthier and less anxious prenatally. Owen and Cox (1989) reported that these results suggest that a mother's satisfaction with her employment status may be a result of her personality characteristics and not simply her employment status and role preference.

Owen and Cox (1989) concluded with a cautionary statement regarding their results. Since their sample size was smaller than recommended by Vaughn et al. (1985) for attachment research, their results should be viewed as exploratory. Owen and Cox (1989) suggested that the study's usefulness was in the investigation of the relationship between maternal employment and the variables associated with the family environment. Although there was only a trend for insecure attachments among the full-time employed mothers, there was a significantly higher rate of resistant behavior in the infants of full-time employed mothers. Furthermore, the results indirectly suggested that mothers who were more sensitive, animated and responsive, and not so anxious; and who were more invested in being a parent, had infants with less resistant behavior.

Goossens and Ijzendoorn (1990) examined 75 infants with their mothers, fathers, and professional caregivers. The families' mean socioeconomic status was upper middle class. All the infants were the youngest in their families and had entered a day-care center before 9 months of age. All infants had a relationship with their professional caregiver at least three months prior to assessment. They were also assessed three times in the Strange Situation at approximately 12, 15, and 18 months of age with mother, father, and caregiver. One purpose of the study was to determine the

characteristics of the family and day-care center which distinguished secure and insecure infants.

In a discriminate analysis, the researchers found that infants who were securely attached to their professional caregivers were from a predominantly middle class socioeconomic status. Those infants also spent more time in nonmaternal care and had professional caregivers who were younger and more sensitive during the free play session prior to the Strange Situation assessment, as opposed to those infants who were insecurely attached to their professional caregivers ($p < .05$).

A longitudinal study by Fish, Belsky, and Youngblade (1991) examined 82 families who had participated in the Pennsylvania Infant and Family Development Project. All families were intact and in their first marriages. They were all Caucasian and predominantly middle or working class. When the children were 12- or 13-months-old, they were classified secure or insecure with the Strange Situation procedure. The purpose of the study was an attempt to identify a method of boundary violation behavior in nonclinical and nonrisk families with 4-year-olds, as well as to examine the antecedents and correlations of this behavior during infancy. The researchers hypothesized that boundary violation would occur in families where less optimal parent-child and marital relationships existed.

The results revealed some significant findings concerning the family characteristics during infancy. The researchers found that during infancy, mothers in the boundary violation group were more likely to be employed and to use nonparental care 20 hours or more per week (80% as compared to 52% in other families, $p < .05$). Mothers in the boundary violation group reported lower work or family support at both 3-months ($p < .05$) and 9-

months ($p < .01$) postpartum than did other employed mothers. There were no significant differences in the work or family stress at 3 and 9 months. Infants in the boundary violation group were more likely to be classified insecurely attached to mother and securely attached to father (42% vs. 13% for other infants, $p < .03$). Additionally, among the boundary violation group, the husband-wife shared pleasure was significantly lower than that of the other husband-wife pairs at 9 months ($p < .05$).

The results revealed a significant finding for the familial characteristics in families with 3-year-old children. Fish, Belsky, and Youngblade (1991) found that 3-year-old children in the boundary violation group were more likely to be classified insecurely attached to mother, as opposed to other children (63% vs. 25%, $p < .05$). To summarize, the researchers found that the families who engaged in boundary violation behavior were distinguished by early and extensive maternal employment and nonparental care, low work or family support for mothers, a decrease in husband-wife shared pleasure, and insecure mother-infant attachment during infancy. Furthermore, those families who exhibited boundary violation behavior were distinguished by insecure mother-infant attachment at 3 years as well.

The within-group analyses of Lamb et al. (1992) revealed that infants in day-care centers, as opposed to in family day-care homes or in in-home settings with babysitters, were more likely to be insecurely attached ($p = .021$). Regarding the effects of nonmaternal care, extent of care, and age of enrollment on avoidance and resistance ratings in the Strange Situation, some significant results emerged. Avoidance ratings were higher for those in nonmaternal care, as opposed to exclusive maternal care ($p < .05$). Ratings of

resistance were higher for the younger, but not older, infants who were exposed to nonmaternal care ($p < .05$).

A study by Egeland and Hiester (1995) examined 69 mother-child pairs who were selected from a sample of families participating in a longitudinal study of high-risk poverty families. The 29 mother-child pairs had begun nonmaternal care at least one month before the infant's first birthday and had spent at least 20 hours a week in nonmaternal care. The researchers noted that although there was no systematic information regarding quality of care, the care tended to be poor with some changes in care arrangements because of family moves or changes in the mother's responsibilities. Additionally, many of the mothers were employed out of necessity, rather than because of a choice to expand their personhood. The 40 home-reared children had not been in routine nonmaternal care for their first 18 months. The racial demographics varied: 80% Caucasian, 13% African-American, and 7% Latino or Native-American. The purpose of the study was to explore the effects of within-group differences of attachment and nonmaternal care experiences on children's adaptation in early and middle childhood. The researchers hypothesized that security of attachment would differentially predict later development for nonmaternal care and exclusive maternal care groups.

In testing for group equivalence on background information for the period of the infant's life between 12 and 42 months, two differences emerged. Mothers utilizing nonmaternal care had higher stressful life events scores and a higher socioeconomic status than the mothers in the home-reared group. Therefore, stressful life events and SES were used as covariates for the analyses. Although family intactness was found as a differentiating factor in the previous study of Vaughn et al. (1980), it was not used as a covariate in

the analyses. Instability in the mothers' relations precluded its use since only four mothers maintained a relationship with the same man.

In comparisons between day-care and home-reared children within attachment groups at 42 months of age, there were significant differences only within the securely attached infant group. The researchers found that within the securely attached group, home-reared children displayed less negative affect ($p = .006$) and less avoidance of mother ($p = .001$), than the day-care group. Additionally, mothers of secure infants in day care prior to 12-months-old, were rated higher on hostility, as compared to mothers whose infants were home reared ($p = .03$). Within the insecurely attached group, there were no significant differences between home-reared and day-care groups. The results suggested that early day care for securely attached children had a negative effect on adaptation at 42-months-old.

Within the home-reared group, mothers of securely attached children at 42 months were higher on respect for autonomy ($p=.004$) and lower on hostility ($p=.000$) than mothers of insecurely attached children. Within the home-reared group, securely attached children were lower on avoidance of mother, as compared to insecurely attached children ($p = .04$). To summarize, attachment classification at 12 months was related to outcomes at 42 months for home-reared children, but not for day-care children.

In kindergarten, comparisons between day-care and home-reared children within attachment groups resulted in some significant differences. Within the securely attached infants at 12-months group, the day-care children were more aggressive ($p = .03$) and externalizing ($p = .03$) than the home-reared children. Within the securely attached group, the home-reared children were rated by their teachers as more competent in emotional health

($p = .05$). Thus, within the securely attached group, the home-reared children appeared to be functioning in a more competent manner than the day-care children. Within the insecurely attached infants group at 12-months, the day-care children were less socially withdrawn ($p = .05$) and more agentic and self-confident ($p = .002$) than home-reared children.

To summarize, the results suggested that the differences between the day-care and home-reared children depended upon the attachment classification at 12-months. Day care seemed to have a detrimental effect on securely attached children, as their behaviors were more aggressive and inappropriate than their home reared counterparts. Home rearing appeared to have a positive effect on secure children, as they were rated healthier than their day-care counterparts. Day care appeared to have a positive effect on insecure children, as they were rated more competent and less withdrawn than the home-reared children.

The within day care group analyses indicated that attachment classification only predicted kindergarten outcomes in home-reared children, and not in day-care children. The securely attached home-reared children were significantly more competent ($p < .05$) than the insecurely attached home-reared children. Within day-care children, there were no significant secure versus insecure group differences. Day care appeared to eliminate the continuity between attachment and kindergarten outcomes that were found for home-reared children.

In first grade, insecurely attached children were rated as having more behavior problems than the securely attached children, notwithstanding day-care status ($p = .02$). The within-group analyses revealed that insecurely attached children in day care were less socially withdrawn than home-reared

insecurely attached children ($p = .04$). As the results indicated in kindergarten, day care appeared to have a positive effect for insecure children.

Within the home-reared group, comparisons between secure and insecure children resulted in some significant differences. Home-reared children who were securely attached were less anxious ($p = .05$), internalizing ($p = .03$), and externalizing ($p = .03$), and more socially involved ($p = .006$) than the home-reared children who were insecurely attached. Again attachment classification was related to outcomes in first grade for the home-reared children only.

In second grade, children in day care were less socially withdrawn than home-reared children ($p = .03$). As with previous findings, attachment differences were found only in the home-reared group. Home-reared children who were securely attached were less aggressive than home-reared children who were insecurely attached ($p = .02$). The outcomes in the third and sixth grades revealed that there were no significant main effects, interactions, or overall covariates.

Egeland and Hiester (1995) concluded from their longitudinal study that children who were classified insecurely attached at 12-months were more likely to exhibit positive adaptation in some areas when they received early day care. On the other hand, children who were classified securely attached at 12-months were more likely to be negatively affected by early day care. The researchers noted the importance of considering these results as exploratory because of the small sample sizes. However, regarding adaptation during the elementary school years, day care may be detrimental to secure infants, but protective for insecure infants. Finally, they concluded that the quality of

attachment may not be the best predictor of developmental outcomes, particularly in the case of early day-care experiences.

As noted by Egeland and Hiester (1995), day care's seemingly positive effect on insecure children and negative effect on secure children brought the means closer together. Day care appeared to have a leveling effect on children's adaptive and maladaptive behaviors. Additionally, the differences between day-care and home-reared children disappeared as development progressed. Thus, early day care appeared to affect only early adaptation in school, and not adaptation in later school years.

Egeland and Hiester (1995) hypothesized that the detrimental effects of day care may be more evident if the mother is not satisfied with her employment and family roles. In the case of the sample utilized, many mothers were impoverished and working was essential. The researchers also hypothesized that secure children were angry or ambivalent in response to the separations from day care. The results from the 42-months assessment suggest that the mother-child relationship was less than optimal. Within the securely attached children in day-care group, the mothers were more hostile and the children were more avoidant and negative than the mother-child pairs in the securely attached children in the home-reared group.

Egeland and Hiester (1995) hypothesized that the beneficial effects of day care may have provided relief for those mothers whose children were insecurely attached. Those mothers may have experienced day care as helping them with the responsibilities of child rearing which then enabled them to provide better care. Additionally, the caregiver-infant relationship may have been able to compensate for an insecure mother-infant attachment relationship.

The quality of the mother-infant attachment relationship appears to be influenced by many factors. As noted and attempted by many researchers, consideration and examination of the variables related to the infant, the family, and the rearing conditions are important when examining the relationship between nonmaternal care and mother-infant attachment security.

Conclusion

The number of mothers with infants entering the work force has increased within the past two decades. A major concern is how the daily separations affect the mother-infant attachment relationship. This review has attempted to examine the relationship between mother-infant attachment relationship and nonmaternal care experiences, as well as the factors which seem to be related to the quality of the attachment relationship with nonmaternal care experiences.

Although methodologically limited, many of the between-group studies found an increase of insecure attachments associated with nonmaternal care. However, it is imperative to keep in mind that many infants in nonmaternal care exhibited secure attachments. Thus, nonmaternal care does not necessarily lead to insecure mother-infant attachments. At the very least, the effects of nonmaternal care in the infant's life need to be understood more clearly.

The within-group analyses in families who utilized nonmaternal care revealed many factors associated with insecure attachments: mother's stress and anxiety, a single-parent status, a low level of maternal integration, negative maternal feelings, mother's report of less satisfaction with marriage,

mother's increased motivation for working, an internal conflict regarding a belief in exclusive maternal care while simultaneously working, the infant being characterized as fussy or difficult, family boundary violation behaviors, and day-care center as the nonmaternal care experience. An examination of consistency across studies revealed maternal characteristics to be a strong contributing factor.

Within families who utilized nonmaternal care, many factors were associated with secure attachments, such as a high level of maternal integration, mother's acceptance and sensitivity, mother's respect for the infant's autonomy, lower ratings of maternal hostility, mother's satisfaction with her nonwork time, a higher socioeconomic status for the family, a greater family income, husband helping with the child rearing, and when mother was employed, father caring for the infant. Thus, nonmaternal care and mother-infant attachment must be examined in the context of individual, family, and environmental differences.

When there was an insecure attachment associated with nonmaternal care, the association was true for specific subsamples or in certain contexts. There were no systematic differences between infants who were reared at home and those who experienced regular nonmaternal care. While maternal attributes appeared to play a strong influential role, there were no clearcut associations between nonmaternal care and attachment security. Therefore, no definitive conclusions can be made regarding the effects of nonmaternal care on the mother-infant attachment relationship. However, the research has provided an arena for exploration of the factors associated with nonmaternal care and mother-infant attachment, as well as directions for future research.

Recommendations for Future Research

An ecological model proposed by McCartney and Galanopoulos (1988) provides a framework in which to conduct future research. An ecological model is beneficial in that it examines the constructs, issues, and interrelations inherent in nonmaternal care and mother-infant attachment. The familial and nonmaternal care contexts are taken into account and examined in relation to mother-infant attachment. The goal of this model is to understand the development of adaptive attachment between parents and infants.

In nonmaternal care and mother-infant attachment research there are two primary microsystems that operate for the infant: family and child care (McCartney & Galanopoulos, 1988). A microsystem is characterized by the intricacies of relations between the developing person and its environment. Thus, examination of the infant's age, sex, birth order, temperament, intelligence, and physical capabilities, in relation to both microsystems is imperative.

In the family microsystem numerous variables need to be considered: family demographics, availability of the parents to the infant's needs, parental attitudes regarding parenthood, child development and employment, dynamics of the parent-infant relationship, and family stress. In the child care microsystem, consideration of nonmaternal care demographics, such as type of setting, professional caregiver-child ratio, quality of care, and amount of time in nonmaternal care need to be considered. Then, assessment of the interrelationships among and between the systems needs to be pursued through statistical analyses. The model for future research proposed by

McCartney and Galanopoulos (1988) highlighted the need to understand the relationship between mother-infant attachment and nonmaternal care within a comprehensive multi-factored context.

Many questions still remain regarding how nonmaternal care experiences affect the mother-infant relationship. The research indicated several areas as the focus of future investigation. First, the samples need to be broadened. While the predominance of the research has focused on Caucasian, middle class intact families, much could be learned from studying the lower and upper classes, different ethnic groups, and single-parent homes.

Second, there were distinct differences between the families studied. Researchers would do well to control for and evaluate those variables related to maternal, paternal, infant, and sibling characteristics. For instance, researchers need to control for family characteristics such as socioeconomic status, level of education, level of income, family intactness, years married, parents' age, parity, number of siblings, and prenatal recruitment of families in order to obtain group equivalence.

Furthermore, researchers need to examine how specific maternal and paternal characteristics such as physical health, psychological health (anxiety, sensitivity, acceptance, sense of self, personal fulfillment, hostility, depression, satisfaction, concerns), interaction with infant, investment in parenthood, role satisfaction, general quality of maternal and paternal care, and reasons for and attitudes toward working are related to nonmaternal care and mother-infant attachment. Infant and sibling characteristics such as physical health, temperment, fussiness, parity, and demandingness need to be examined as well. The functioning of the family as a whole also needs to be investigated. For instance, the mother-infant relationship might be secure

while the father-infant relationship might be insecure. Researchers need to understand how an insecure attachment with one parent or both parents affect later functioning. They also need to examine how nonparental care is related to and affects mother-infant, father-infant and sibling-infant attachment relationships within the same family.

Third, since there were distinct differences among the nonmaternal care experiences, researchers should attempt to control for and evaluate those variables related to nonmaternal care. The caregiver's psychological and physical health; number, ages, psychological and physical health, and temperments of other children in the nonmaternal care experience; age of entry into nonmaternal care; amount of time in nonmaternal care to be considered a member of the group; the type and quality of the nonmaternal care experience; caregiver-infant ratio; and parents' satisfaction with nonmaternal care need to be examined.

Fourth, researchers need to clarify the status and roles of the family. Whether the family is comprised of both parents, a single-parent, or a live-in boyfriend or girlfriend would seem to affect the family's functioning. Researchers need to clarify who is and who is not caring for the infant. For instance, is mother working while father is caring for the infant, or are mother and father both working and someone else is caring for the infant? Researchers need to report the specific nature of the alternate caregiving arrangement so that nonmaternal and nonpaternal care can be more clearly understood.

Fifth, the breakdown into the various groups of infants receiving nonmaternal care needs to be done more systematically. For instance, Jacobson and Wille (1984) divided their sample into three groups of

nonmaternal care: 0-3 hours, 4-19 hours, and 20-54 hours. There may be a major difference between 4 and 19 hours as well as between 20 and 54 hours which may be obscured by combining them into one group. It would be interesting to break the sample into two groups: 0-1 hours daily of nonmaternal care, and 6 or more hours daily of nonmaternal care. This breakdown might reveal more of a difference in the security of the mother-infant attachment relationship.

Finally, noted earlier by Lamb and Sternberg (1990), obtaining information about family and infant functioning before, during, and after nonmaternal care would enable researchers to be more clear about whether the differences in attachment were due to the nonmaternal care experience or some other variables. Researchers need to tease apart the effects of early and concurrent environmental contexts. For example, is the nonmaternal care experience causing the quality of the attachment relationship or is it a result of early and foundational mothering and parenting? Vaughn et al. (1985) noted that the effects of nonmaternal care can only be understood by jointly considering the interaction of attachment history and nonmaternal care experiences.

The research has identified several factors associated with nonmaternal care and mother-infant attachment. By designing studies so that the factors could be examined more closely, valuable information regarding the nuances of the relationship between nonmaternal care and mother-infant attachment could be obtained. For example, the maternal characteristics of anxiety and sensitivity were associated with security of attachment and maternal employment, and so should be studied in more detail.

By understanding more precisely how nonmaternal care affects the mother-infant relationship, prevention strategies can be formulated and the provision of services enhanced. With increased understanding, social and political policies may be drafted more insightfully and family decisions about maternal employment and the quality of nonmaternal care may be made with greater awareness of the consequences. For instance, if a mother decides to work, then she might be able to arrange her schedule so that the infant could be cared for by the father or a trustworthy baby-sitter in the infant's home, or so that the number of hours in day care is within the range that has not been demonstrated to be associated with higher levels of insecure attachments. The prevalence of infants in regular nonmaternal care experiences highlights the need to provide better quality and more effective services to families with infants. The issue is not whether nonmaternal care is bad for infants, as it is a reality for many families, but how families and society can be equipped to wisely provide for infants who need regular nonmaternal care.

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